



MOTOR VEHICLE THEFTS

Overview



In response to the growing concern over motor vehicle thefts, the New Zealand Police Department has enlisted the help of data analysts to uncover trends and patterns that can help raise public awareness and improve safety measures.

The main objective is to analyze the stolen vehicles database to identify insights on when, where and what types of vehicles are most frequently targeted by thieves.

Dataset



- Stolen Vehicle data from New Zealand police department's vehicle database containing 6 months of data
- Each record represents a single stolen vehicle with data on vehicle type, make, year, color, date stolen and region
- Data Structure: Multiple Tables
- Total Records: 4707
- Total Fields: 14

Tables

stolen_vehicles

vehide_id	vehicle_type	make_id	model_year	vehicle_desc	color	date_stolen	location_id
1	Trailer	623	2021	BST2021D	Silver	2021-11-05	102
2	Boat Trailer	623	2021	OUTBACK BOATS FT470	Silver	2021-12-13	105
3	Boat Trailer	623	2021	ASD JETSKI	Silver	2022-02-13	102
4	Trailer	623	2021	MSC 7X4	Silver	2021-11-13	106
5	Trailer	623	2018	D-MAX 8X5	Silver	2022-01-10	102
6	Roadbike	636	2005	YZF-R6T	Black	2021-12-31	102
7	Trailer	623	2021	CAAR TRANSPORTER	Silver	2021-11-12	114
8	Boat Trailer	623	2001	BOAT	Silver	2022-02-22	109
9	Trailer	514	2021	7X4-6" 1000KG	Silver	2022-02-25	115
10	Trailer	514	2020	8X4 TANDEM	Silver	2022-01-03	114
11	Trailer	623	2018	HOMEBUILT	Silver	2021-10-15	108
12	Trailer	538	2018	BRENT SMITH TRAILERS	Silver	2022-02-28	102
13	Moped	629	2004	ET2	Black	2021-12-19	102
14	Moped	550	2007	TODAY	Blue	2022-01-23	102
15	Roadbike	611	2007	DL 650	Black	2022-02-28	101

make_details

make_id	make_name	make_type
501	Aakron Xpress	Standard
502	ADLY	Standard
503	Alpha	Standard
504	Anglo	Standard
505	Aprilia	Standard
506	Atlas	Standard
507	Audi	Standard
508	Bailey	Standard
509	Bedford	Standard
510	Benelli	Standard

locations

location_id	region	country	population	density
101	Northland	New Zealand	201500	16.11
102	Auckland	New Zealand	1695200	343.09
103	Waikato	New Zealand	513800	21.50
104	Bay of Plenty	New Zealand	347700	28.80
105	Gisborne	New Zealand	52100	6.21
106	Hawke's Bay	New Zealand	182700	12.92
107	Taranaki	New Zealand	127300	17.55
108	Manawatū-Whanganui	New Zealand	258200	11.62
109	Wellington	New Zealand	543500	67.52
110	Tasman	New Zealand	58700	6.10
111	Nelson	New Zealand	54500	129.15
112	Marlborough	New Zealand	51900	4.94
113	West Coast	New Zealand	32700	1.41
114	Canterbury	New Zealand	655000	14.73



Some Key Objectives

Number of Vehicles stolen each year

year	number_of_vehicules
2021	1668
2022	2885

In 2021, 1,668 vehicles were stolen, while in 2022, the number rose to 2,885.

Number of Vehicles stolen each month

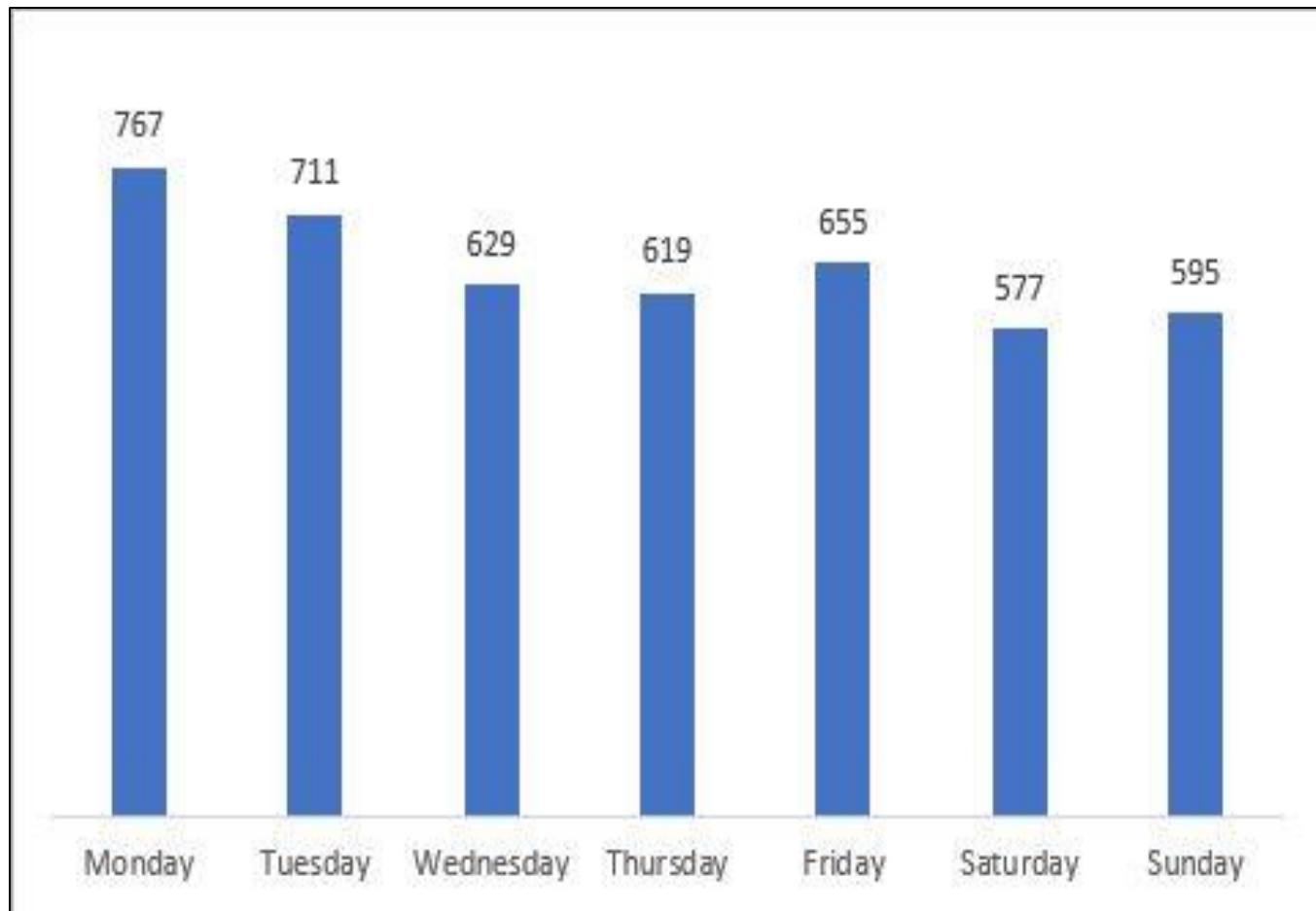
year	month	number_of_vehicles
2021	10	464
2021	11	560
2021	12	644
2022	1	740
2022	2	763
2022	3	1053
2022	4	329

Vehicle thefts have increased month by month, except in April 2022, which shows a decline as the data only covers the first 6 days of the month.

Number of Vehicles stolen each day of week

dow	day_of_week	number_of_vehicles
1	Sunday	595
2	Monday	767
3	Tuesday	711
4	Wednesday	629
5	Thursday	619
6	Friday	655
7	Saturday	577

Mondays and Tuesdays have the highest number of vehicle thefts.



Vehicle thefts are highest on Mondays and Tuesdays and decrease towards the weekend, suggesting a higher risk at the start of the week.

Vehicle Types that are most often and least often stolen

vehicle_type	number_of_vehicles
Stationwagon	945
Saloon	851
Hatchback	644
Trailer	582
Utility	466

Most often stolen

vehicle_type	number_of_vehicles
Articulated Truck	1
Special Purpose Vehicle	1
Mobile Machine	2
Trail Bike	2
Tractor	4

Least often stolen

Station wagons are the most frequently stolen vehicles in New Zealand.

For each vehicle type, average age of the cars that are stolen

vehicle_type	avg_age
Special Purpose Vehicle	64.0000
Mobile Home - Light	34.6667
Flat Deck Truck	27.8235
Caravan	27.8182
Other Truck	23.1905
Convertible	22.6667
Heavy Van	22.5714
Sports Car	22.0000
Trail Bike	20.5000
Light Van	19.4351
Stationwagon	19.2148
Saloon	19.0529
Utility	17.8176
Hatchback	16.2671
Articulated Truck	15.0000
Light Bus	14.6667
Boat Trailer	13.2762
Trailer - Heavy	11.4556
Total	11.4141

The oldest stolen vehicles are Special Purpose Vehicles, with an average age of 64 years and newer tractors and moped are often stolen.

For each vehicle type, the percent of vehicles stolen that are luxury versus standard

vehide_type	pct_luxury
Convertible	50.0000
Sports Car	22.5000
Heavy Van	14.2857
Saloon	12.9260
Others	3.8462
Stationwagon	3.7037
Hatchback	3.2609
Roadbike	1.3468
Light Van	1.2987
Utility	0.2146
Trailer	0.0000
Boat Trailer	0.0000
Moped	0.0000
Trailer - Heavy	0.0000
Caravan	0.0000
Tractor	0.0000
Trail Bike	0.0000
All Terrain Ve...	0.0000
Other Truck	0.0000

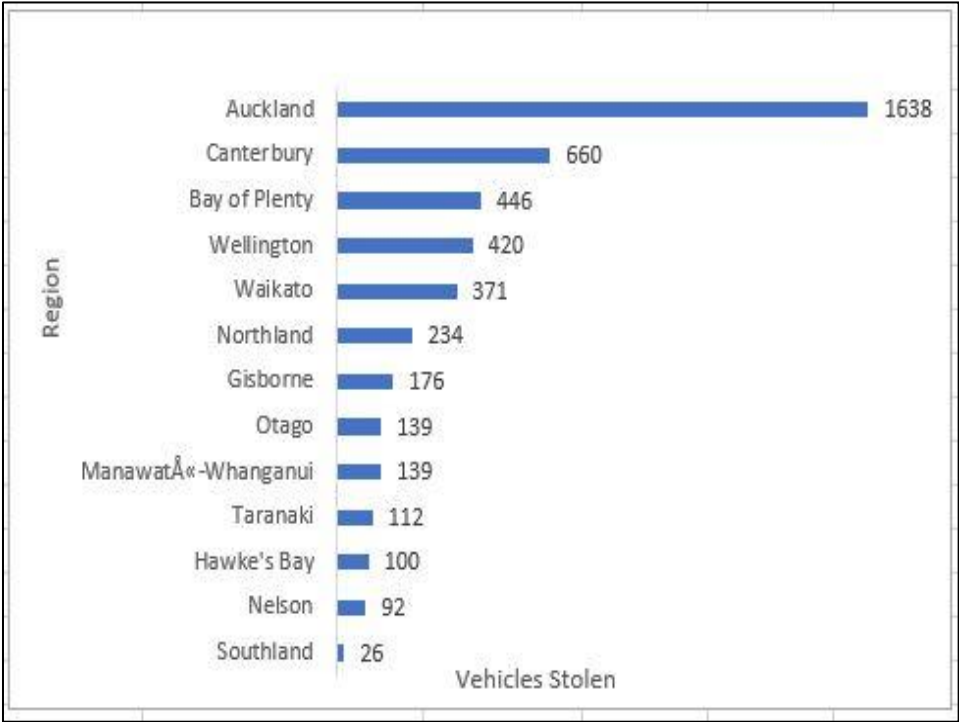
Convertibles are the most targeted luxury vehicles (50% of stolen convertibles are luxury models).

vehicle_type	number_of_vehicles	Silver	White	Black	Blue	Red	Grey	Green	other
Stationwagon	945	223	159	141	142	84	84	59	53
Saloon	851	226	160	99	125	75	71	52	43
Hatchback	644	172	114	76	104	58	46	24	50
Trailer	582	399	21	29	17	9	73	22	12
Utility	466	71	183	36	46	45	32	38	15
Roadbike	297	17	42	105	38	51	11	12	21
Moped	187	8	25	85	18	34	3	1	13
Light Van	154	19	104	0	5	7	7	6	6
Boat Trailer	105	67	5	3	0	0	29	0	1
Trailer - Heavy	90	53	9	1	3	0	12	2	10
		1255	822	575	498	363	368	216	224

- Top 3 Stolen Vehicles: Station wagon, Saloon and Hatchback
- Silver dominates across all vehicle types with 1,255 thefts, followed by White and Black
- Least Stolen Vehicles: Light Van, Boat Trailer and Trailer- Heavy

Number of vehicles that were stolen in each region

region	number_of_vehicles
Auckland	1638
Gisborne	176
Hawke's Bay	100
Canterbury	660
Wellington	420
Otago	139
Manawatū-Whanganui	139
Northland	234
Bay of Plenty	446
Waikato	371
Nelson	92
Taranaki	112
Southland	26



Maximum number of vehicles were stolen in Auckland, New Zealand.

The three most and least dense regions

region	number_of_vehicles	population	density
Auckland	1638	1695200	343.09
Nelson	92	54500	129.15
Wellington	420	543500	67.52
Bay of Plenty	446	347700	28.80
Waikato	371	513800	21.50
Taranaki	112	127300	17.55
Northland	234	201500	16.11
Canterbury	660	655000	14.72
Hawke's Bay	100	182700	12.92
Manawatū-Whanganui	139	258200	11.62
Otago	139	246000	7.89
Gisborne	176	52100	6.21
Southland	26	102400	3.28

Auckland, the region with the highest population density, has the highest number of vehicle thefts, while Southland, the least dense region, experiences fewer thefts.

Key Insights

- A total of 4,553 vehicle thefts were reported in New Zealand
- The monthly theft rate exhibited a gradual increase, peaking at 1,053 incidents in March 2022
- Mondays and Tuesdays consistently recorded the highest number of thefts
- A total of 16 regions across New Zealand reported vehicle thefts. Auckland, the region with the highest population density, reported the most vehicle thefts, while Southland, the least densely populated region, experienced fewer incidents.
- Silver was the most common color among stolen vehicles, with 1,255 incidents, followed by white and black
- Convertibles were the most targeted luxury vehicles, with 50% of stolen convertibles being luxury models, followed by sports cars, heavy vans, and saloons.

Thank you

